

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 2, 4, 12, 13, 15, 22 and 23** are rejected under 35 U.S.C. 102(b) as being anticipated by May US 6,581,480 (hereinafter referred to as May '480).

Regarding **claim 1**, May '480 discloses a method for magnetizing an object surrounded by a second object, as seen in figure 5b for example, in which a first object 62 surrounds a second object 10 and a first electrical signal 60 is applied to the second object so that a portion of the first or second object is magnetized as claimed.

Regarding **claims 2 and 4**, the signal sent through the object is a pulse signal in the form of an oscillating current.

Regarding **claim 10**, May '480 discloses an apparatus for magnetizing an object surrounded by a second object, as seen in figure 5b for example, in which a first object 62 surrounds a second object 10 and a first electrical signal 60 is provided from a source and applied to the second object so that a portion of the first or second object is magnetized as claimed.

Regarding **claim 12**, the apparatus of May '480 shows and describes the second object as being a shaft, wire or hollow tube as claimed.

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Regarding **claim 13**, the second object of May '480 is arranged at the center of the first object as claimed.

Regarding **claim 15**, the apparatus of May '480 discloses a first electrical connection and a second electrical connection on the first object and a first and second electrical connection on the second object where those of the first object are connected such that the second electrical connection of the first object is coupled to the first electrical connection of the second object as claimed.

Regarding **claim 16**, May '480 allows for the first signal to be applied between the first electrical connection and the second electrical connection.

Regarding **claim 22**, the second object of May 480 comprises a first connection and a second connection wherein the signal travels from the first connection to the second connection as claimed.

Regarding **claim 23**, the signal source of May '480 is disconnected from the first object as claimed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 3, 5, and 6-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over May '480 in view of May US 2003/0150282 (hereinafter referred to as May '282).

Regarding **claim 3**, as the method of May '480 discloses the use of a signal generator for creating the pulse signal while the method of May '282 discloses a method of magnetization comprising use of a ramped signal with different rising and falling edges. It would have been obvious to one of ordinary skill in the art through routine experimentation to have selected suitable values for the signal which could easily be generated by the signal generator of the 480 reference.

Regarding **claim 5**, multiple signals would be generated by the signal generator of May at a point during the magnetization process. As most generating means provide means for adjusting amplitude, sign, signal shape, and duration as claimed, it would have been obvious to one of ordinary skill in the art at the time of invention to have adjusted the signal (first or second) to any desired form.

Regarding **claim 6**, as the first signal is a pulse signal, any subsequent signals from the same generator would be pulse signals as well.

Regarding **claim 7**, as the method of May '480 discloses the use of a signal generator for creating the pulse signal while the method of May '282 discloses a method of magnetization comprising use of a ramped signal with different rising and falling edges. It would have been obvious to one of ordinary skill in the art through routine experimentation to have selected suitable values for the signal which could easily be generated by the signal generator of the 480 reference.

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Regarding **claim 8**, the '282 reference teaches a method for generating longitudinal magnetization in a portion of a shaft in which a surface adjacent magnetized zone is generated such that the electrical signal is perpendicular to the surface of the first object as claimed and magnetic flow in two opposite directions is present.

Regarding **claim 9**, the signal sent through the object is a pulse signal in the form of an oscillating current.

**Claims 14, 17, 18, 21 and 24-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over May '480.

Regarding **claim 14**, it would have been would have been obvious to one of ordinary skill in the art at the time of invention to have used a signal generating source comprising a capacitor bank as claimed as capacitor banks are commonly found in signal sources to increase the capacitance of the signals.

Regarding **claim 17**, it would have been obvious to one of ordinary skill in the art at the time of invention to have added a third electrical connection or to use a portion of the existing connections as a third as it would require only routine knowledge of the art.

Regarding **claim 18**, when connected to the signal source, the apparatus of May 480 would allow for a signal to be applied as claimed to the connections if so desired to magnetize the object in any manner desired.

Regarding **claim 21**, it would have been obvious to one of ordinary skill in the art at the time of invention to have magnetized both the first and second objects as claimed, as it would require only routine knowledge of the art.

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Regarding **claims 24-27**, examiner takes official notice that it is common in the art to shield portions of magnetized objects to reduce their effects on other objects around them which could be detrimental. In the present case, a shielding could easily be adapted as needed to protect the elements which are not to be magnetized as claimed.

**Claims 11, 19, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over May 480 in view of Garshelis WO95/33982 (hereinafter referred to as Garshelis).

Regarding **claim 11**, the May '480 reference fails to teach the object as being a hollow tube as claimed. Garshelis discloses a method of magnetizing a hollow tube as claimed. It would have been obvious to one of ordinary skill in the art at the time of invention to have used the hollow tube of Garshelis if an application required a hollow passageway such as a pipeline to be magnetized for filtering or sampling.

Regarding **claims 19 and 20**, Garshelis discloses submersing the pipeline in a conductive fluid coupling element such as mercury as claimed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK SHABMAN whose telephone number is (571)270-3263. The examiner can normally be reached on M-F 8:00am - 4:30pm, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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